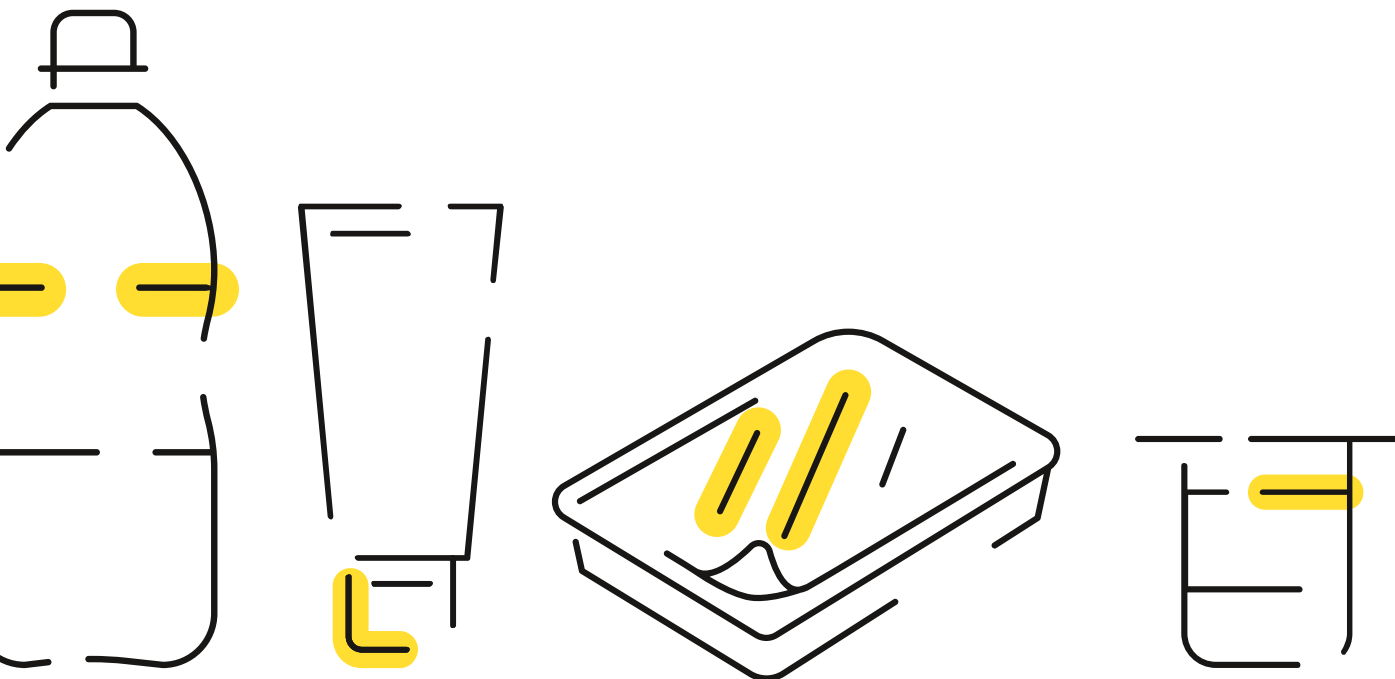


International Quebec-France Forum

Plastic solutions: recycling innovations on both sides of the Atlantic

Paris, February 4-5, 2019

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“Technological innovation is a key response to the global challenge of plastic recycling”

- A Forum with a focus on **personal relationships and direct dialogue** between industry, plastic users, financiers, and project developers
- Get up to date on the latest plastic recycling **solutions**
- Meet the developers of **innovative plastic recycling projects**, from nine countries across three continents
- **300 attendees spending two days together**, from sectors like plastic recycling, retail, supply chain, finance, and industry
- Targeted presentations **to understand the current state of plastic recycling**
- **Development opportunities** for companies that use plastic packaging

Plastic recycling in context

A technological leap forward is required if we are to hit future plastic recycling targets



All over the world, governments and international organisations are making known their desire to increase the plastic recycling rate in an effort to end the pollution caused by plastic waste, especially in our seas.

And businesses are right there with them: today, many of them publicise their desire to use recyclable and recycled plastics in their packaging.

These voluntary statements provide a direction, but we still need to find the right path, because plastic is not like other materials. Being a product of the oil industry, plastic is composed of molecules of organic polymers that aren't as easy to recycle as metals, for example. Made up of several resins, it is also commonly combined with additives and fillers that make packaging more useful, but which also complicate the recycling process. And ultimately, once used, plastic packaging can be left dirty by the products it served to protect.

These different constraints make plastic recycling an industrial challenge. The technological leap may come from research and development in polymers (depolymerisation, dissolution, distillation, purification, repolymerisation, etc.), or even biology (enzymatic depolymerisation). Indeed, these are the fields in which we have seen numerous new projects over the past decade, several of which are now entering the industrial phase.

These new technologies are the central theme of the Plastic Solutions Forum. Complementing current recycling processes, they can accelerate plastic's transition into the circular economy, thereby helping to conserve our resources and protect our environment.

The innovative companies we have selected to take part have all developed new approaches to plastic recycling that produce recycled products with high levels of purity, identical to that of virgin plastics.

In recent years, a number of government bodies have introduced measures to combat plastic waste, both to limit how much plastic ends up in the ocean, and to improve plastic recycling techniques. In this vein, the European Union adopted A European Strategy for Plastics in a Circular Economy, and in July, Canada and several other G7 countries adopted the Oceans Plastic Charter.

The proposed measures include several that are directly related to the recycling of plastic packaging: limiting single-use plastics with the aim of 100% of plastic packaging being reusable and recyclable by 2030, promoting eco-design and stimulating technological innovation, and developing international standards for the sorting and recycling of plastics.



Forum objectives

The Plastic Solutions Forum is proud to present answers to the challenges of plastics recycling

In Paris on February 4-5, 2019, Éco Entreprises Québec (ÉÉQ) and Citeo are holding a Forum entitled **“Plastic solutions: recycling innovations on both sides of the Atlantic”**.

Running over two days, the Forum will bring together thirteen innovative companies in Paris. Every single one of them is at the cutting edge of new plastic recycling techniques (start-ups and established industry players), and they will be joined by big names in retail and supply chain, financiers and investors, industrial partners, and political decision-makers.

In a rapidly developing field, the Plastic Solutions Forum is setting out to provide both a comprehensive overview of the state of the art, and access to the decision-makers who will make the difference. In addition to the forum itself, the aim is also to promote the development of new industrial recycling projects by facilitating investment decisions through a pertinent selection of potential partners: project developers, main international clients, public and private financial players, and industry names in the plastics sector.

The aim is to accelerate innovation to reach the industrial scale, and make the promise of a circular economy a full reality.

OBJECTIVE

Most observers believe that the sector has recently passed a threshold, and statements of intent are coming in quick succession. Within the next 3-5 years, it is a real possibility that facilities in Europe and North America will be making use of new approaches to plastic recycling based on research into polymers (depolymerisation, dissolution, purifications, repolymerisation, etc.).

Sector players and brand owners are eagerly awaiting this kind of technology. Because of this, the Forum is setting out to promote the most significant plastics recycling projects from Quebec, North America, and Europe. Attendees will have the opportunity to:

- **Attend presentations** on the most promising technologies and projects
- **Meet the brains behind the technology**, one-on-one (requires booking)
- **Listen to policymakers and industry players** reveal their programmes to promote plastic recycling

ÉEQ AND CITEO, FORUM ORGANISERS



ÉEQ is a private non-profit organization that represents the companies that put containers, packaging and printed matter on the market, and have a legal obligation to fund municipal curbside recycling services. As an industry expert, ÉEQ optimises the value chain of curbside recycling services, and shines the spotlight on innovative approaches, with a view to furthering sustainable development and the circular economy.

www.eeq.ca



Together, let's bring new life to our packaging

Born of a partnership between Eco-Emballages and Ecofolio, Citeo is a not-for-profit limited company, founded to reduce the environmental impact of paper and packaging. 250 staff work with passion and dedication to deliver solutions for businesses, support them in their environmental responsibility, improve the performance and cost-effectiveness of sorting and recycling, and mobilize the community to develop more straightforward, effective recycling habits.

www.citeo.com

Project developers in attendance

We selected a limited number of companies in an effort to promote only the most relevant recycling projects.

COMPANY	TYPE OF PLASTIC	WEBSITE	COUNTRY
CARBIOS	PET	www.carbios.fr	France
GARBO	PET	www.garbosrl.net	Italy
GR3N	PET	www.gr3n-recycling.com	Italy/Switzerland
IFP Energies Nouvelles	PET	www.ifpen.fr	France
IONIQA Technologies B.V.	PET	www.ioniqa.com	Netherlands
JEPLAN	PET	www.jeplan.co.jp/en/	Japan
LOOP INDUSTRIES	PET	www.loopindustries.com	Canada
APK	Films	www.apk-ag.de/en/	Germany
FRAUNHOFER IVV	Films	www.ivv.fraunhofer.de/en	Germany
POLYSTYVERT	PS	www.polystyvert.com	Canada
PURECYCLE TECHNOLOGIES	PP	www.purecycletech.com/	USA
PYROWAVE	PS	www.pyrowave.com	Canada
RECYCLING TECHNOLOGIES	PE, PP	www.recyclingtechnologies.co.uk/	UK

Forum

program

Held over two days, the Forum is organised into two phases:

- 1 Plenary presentations where project developers speak about their skills and experience, and round tables debates with industry and institutional players
- 2 Individual business meetings between participants

DAY 1

Monday February 4, 2019

1.30pm-2.15pm	Welcome gathering
2.15pm-2.30pm	Opening of the Forum Brune Poirson, Secretary of State to the French Minister for the Ecological and Inclusive Transition and Catherine McKenna (web diffusion), Minister of Environment and Climate Change, Canada
2.30pm-2.45pm	Introduction and Forum presentation Maryse Vermette, CEO of Éco Entreprises Québec and Jean Hornain, CEO of Citeo
2.45-3.15pm	Technical, economic, and environmental challenges of plastic recycling in Europe and North America Carlos de los Llanos, Scientific Director of Citeo and Pierre Benabidès, Counsellor, materials and market development at Éco Entreprises Québec
3.15pm-4.45pm	Project developer presentations on their company and technologies Session #1, PET - 7 presentations x 10 min Carbios, Garbo, Gr3n, IFP Energies Nouvelles, IONIGA, Jeplan, Loop Industries
4.45pm-5.15pm	Break
5.15pm-6.45pm	Project developer presentations on their company and technologies Session #2, PE, PP, PS and other plastics - 6 presentations x 10 min APK, Fraunhofer IVV, Polystyvert, PureCycle Technologies, Pyrowave, Recycling Technologies
6.45pm-9.00pm	Cocktail dinner

DAY 2

Tuesday February 5, 2019

In parallel to individual meetings with project developers, attendees can also take part in three round table debates.

8.15am–9.00am Welcome coffee

9.00am–10.30am **Individual meetings**
organised in advance,
with project developers
3x30 min meetings

Round table 1: Objectives, commitments and actions of consumer goods and distribution companies with respect to plastic recycling

Luc Baeyens, Roxane
Françoise Bresson, Nestlé Waters
Denis Brisebois, Metro Québec
Gian De Belder, Procter & Gamble
Béatrice Javary, Auchan
Sophie Jayet-Creusot, Unilever
Jean-Marie Julien, L'Oréal

10.30am–11.00am Break

11.00am–12.30pm **Individual meetings**
organised in advance,
with project developers
3x30 min meetings

Round table 2: Public policies concerning the management of plastic waste: France, European Union, Canada, OECD

Philippe Bodenez, French Ministry for the Ecological and Inclusive Transition
Peter Borkey, OECD
Marie Dussault, Ministry of Sustainable Development, Environment, and Fight Against Climate Change, Québec
Kestutis Sadauskas, European Commission
Huguette Tiegna, Assemblée Nationale, France
Susan Young, Environment and Climate Change, Canada

12.30pm–2.00pm Cocktail lunch

2.00pm–4.00pm **Individual meetings**
organised in advance,
with project developers
4x30 min meetings

Round table 3: Projects in the plastic and recycling industry in Europe and North America (2.30 — 4.00 pm)

Christian Crépet, Petcore
Wim Hoenderdaal, Indorama
Éric Quenet, Plastics Europe
Thierry Saudemont, Total
Dimitri Tsingakis, Association industrielle de l'Est de Montréal

4.00pm–4.30pm **Conclusion and acknowledgements**
Maryse Vermette, CEO of Éco Entreprises Québec and Jean Hornain, CEO of Citeo

4.30pm–5.00pm **Individual meeting**
organised in advance,
with project developers,
1x30 min meeting

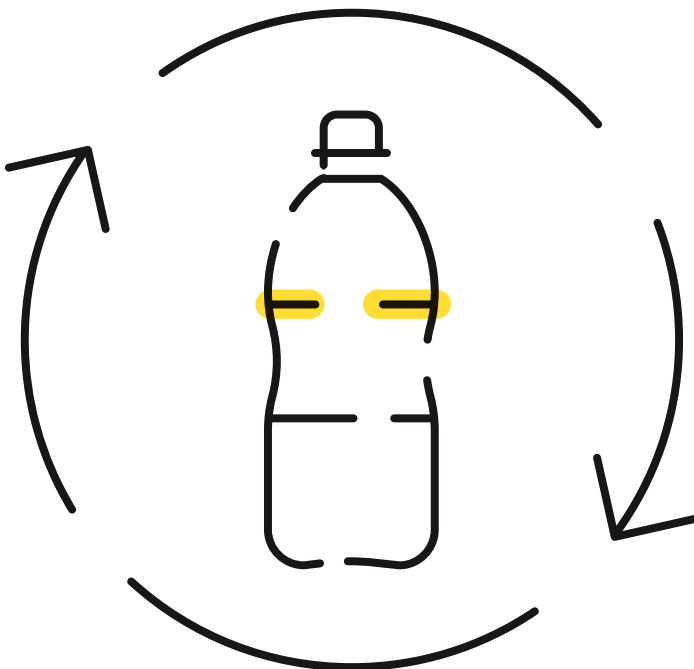
PRO-GRAM

Plastic recycling and innovation

What are the main kinds of recycling used today?

The plastic recycling industry today is based on sorting, grinding, washing, and extrusion techniques, which operate on solid plastics or plastics near their melting temperature, and which do not have any effect on the general molecular structure of polymer chains.

These mechanical techniques are used on relatively homogeneous and clean plastic waste. However, they are unable to extract colourings or mineral filler from recycled plastics. Polymers can only withstand a limited number of mechanical recycling processes and retain properties similar to their virgin state.

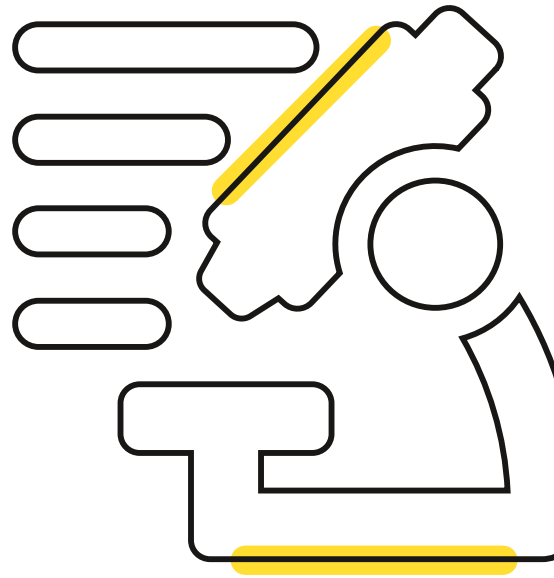


What other technologies are in development?

Recycling by depolymerisation describes technologies that break down polymer chains into different, more or less homogeneous, components, which can then be re-used to make new plastics. Another approach is recycling by dissolution, in which polymers can be selected and purified in their liquid state.

These techniques are of real interest because they produce recycled products with high levels of purity, identical to virgin plastics.

In general, depolymerisation and dissolution would complement current mechanical recycling techniques. They will serve to process more plastic waste and significantly increase the proportion of recycled material used to make new plastic products and packaging.



Recent acceleration, and plentiful projects

The number of announcements of recycling projects and processes from start-ups has grown considerably in recent times. This signals the fruit of advances made in the past few years, as well as one of the consequences of current challenges in plastic.

NOVATION

International Forum

from Citeo and Éco Entreprises Québec

Plastic recycling is now a global challenge: it faces every country, and is a hot topic for every international organisation. Furthermore, technological innovation knows no borders. This is why the Forum is decidedly international in scope: companies have been invited from Canada, France, the Netherlands, Italy, Germany, the USA, and Japan.

Since 2005 in Quebec and 1992 in France, ÉEQ and CITEO have been working to reduce the environmental impact of everyday products, and further develop eco-design and the collection, sorting, and recycling of household waste. They are also actively engaged in the development of new recycling channels for plastics: a global challenge, and one for which international cooperation is essential.

Quebec and France have similar industrial responsibility systems. ÉEQ and Citeo have been working together for years, and are both faced with the challenges of plastic recycling, and the pressing need to find solutions. To do this, they have launched an initiative to identify and support European and Quebecois start-ups that are developing the most promising and innovative recycling projects.



Together, let's bring new life
to our packaging

Carlos de Los Llanos

Scientific Director

Tel: +33 (0)1 81 69 06 91

carlos.delosllanos@citeo.com



Pierre Benabidès

Counsellor, materials and market development

Tel: +1 514 987-1491, poste 254

pbenabides@eeq.ca

